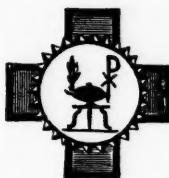


# RECORDS OF THE PAST

VOL. V



PART XII

DECEMBER, 1906



## THE DOME OF SS. SERGIUS AND BACCHUS AT CONSTANTINOPLE

NOT far from the great mosque of Hagia Sophia but nearer the shore of the Sea of Marmora is a small mosque, known to-day as the Kutchuk-aya-Sofia or the Little Hagia Sophia.

Historians of architecture have heralded it as the prototype of Hagia Sophia in Constantinople and of S. Vitale in Ravenna. Some have pointed to it as furnishing the earliest European example of a dome poised upon a polygonal base by means of pendentives—a method of domical construction which has prevailed not only in Constantinople and in Western Europe but wherever Byzantine influence has reached, from the VI century to the present day. Others more impressed by the melon-shaped form of the dome have proclaimed it as the prototype of the many strange forms of domes which subsequently appeared in various countries of Europe and Asia. So it is worth our while to obtain, if possible, a clear notion of the construction and form of this influential building.

The building in its present condition has lost much of its ancient character through Turkish restoration, but our knowledge of it has suffered even more through misrepresentation by historians of architecture. Its very name has become obscured. An inscription in the building itself tells us that the Emperor Justinian dedicated it to the

martyr Sergius;<sup>1</sup> whereas Procopius<sup>2</sup> speaks of it as the church of SS. Sergius and Bacchus. Alongside of it was a church of basilican plan, and these two churches—one a building of circular construction, the other a basilica—had a common narthex and opened into a single court. Procopius also mentions in the same connection the church dedicated to SS. Peter and Paul. Later writers have been somewhat at a loss whether to name the circular church S. Sergius and the basilica S. Bacchus, or to assign the former to SS. Sergius and Bacchus and the latter to SS. Peter and Paul. For our purposes the decision of this question is insignificant, as we are concerned only with form of the domical church.

Its ground plan was misrepresented in 1852 by Lenoir,<sup>3</sup> who gave to it a French apse, circular upon the exterior as well as on the interior. His error was perpetuated by James Fergusson<sup>4</sup> and by Sir Gilbert Stuart.<sup>5</sup>

In 1854 W. Salzenberg<sup>6</sup> corrected the form of the apse, but perpetuated Lenoir's error by giving to the plan a symmetrical character. This symmetrical plan of Salzenberg's has been republished many times during the last 50 years. It was republished in Germany by Kugler,<sup>7</sup> Hübsch,<sup>8</sup> Schmaase,<sup>9</sup> Lübke,<sup>10</sup> Essenwein,<sup>11</sup> Reber,<sup>12</sup> Kraus,<sup>13</sup> Borrman & Neuwirth,<sup>14</sup> and others; in France by Gosset,<sup>15</sup> and by Choisy;<sup>16</sup> in the United States by Clarke in his translation of Reber's *Mediaeval Art*.

That the plan of the church was not symmetrical, but deviated considerably from absolute regularity, is evident from the apparently very careful plan published by the architect, D. Pulgher.<sup>17</sup> This plan has been published by Adamy,<sup>18</sup> Dehio and Bezold,<sup>19</sup> Holtzinger<sup>20</sup> and Lowrie.<sup>21</sup>

So far as we may judge from a photographic reproduction of the

<sup>1</sup> Salzenberg, *Altchristliche Baudenkmale von Constantinopel*, p. 43.

<sup>2</sup> Procopius, *De Edificiis*, I, 4.

<sup>3</sup> Lenoir, *Architecture Monastique*, P. 257. Paris 1852.

<sup>4</sup> Fergusson, *Hist. of Architecture* 2 ed. Vol. II; p. 442. London 1874.

<sup>5</sup> Gilbert Stuart, *Lectures on the Rise and Development of Mediaeval Architecture*. Vol. II; p. 248. London 1879.

<sup>6</sup> W. Salzenberg, *Altchristliche Baudenkmale von Constantinopel*, Bl. V. Berlin 1854.

<sup>7</sup> Franz Kugler, *Geschichte der Baukunst* I, p. 421. Stuttgart 1859.

<sup>8</sup> H. Hübsch, *Die Altchristlichen Kirchen nach den Baudenkmälern und älteren Beschreibungen*. Taf. 32. Karlsruhe 1863.

<sup>9</sup> C. Schmaase, *Geschichte der Bildenden Kunste*, III, p. 151. Stuttgart 1869.

<sup>10</sup> W. Lübke, *Geschichte der Architektur*, p. 267, 5 Aufl. Leipzig 1875.

<sup>11</sup> Essenwein, *Die Ausgänge der klassischen Baukunst*, p. 110. Darmstadt 1886.

<sup>12</sup> Reber, *History of Mediaeval Art*, p. 56. Trans. by J. T. Clarke, New York, 1886.

<sup>13</sup> Kraus, *Geschichte der christlichen Kunst*, I, p. 361. Freiberg in B. 1896.

<sup>14</sup> Borrman & Neuwirth, *Ceschische der Baukunst*, II, p. 54. Leipzig 1904.

<sup>15</sup> A. Gosset, *Les Coupole*, pl. 2. Paris. 1889.

<sup>16</sup> A. Choisy, *L'Art de Batir chez les Byzantins*, pl. XX. Paris, 1883.

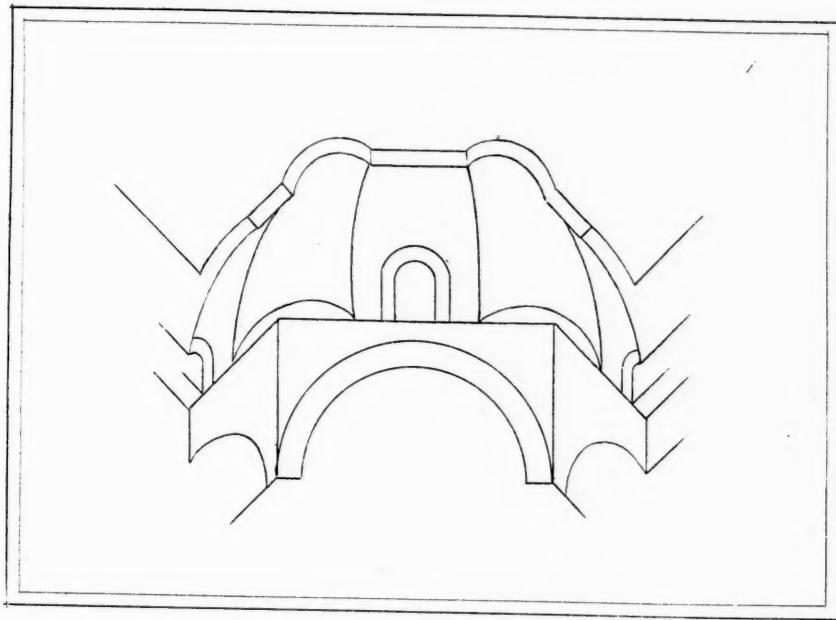
<sup>17</sup> D. Pulgher, *Les anciennes églises byzantines de Constantinople*, Pl. 3. Vienna 1878-80.

<sup>18</sup> R. Adamy, *Architektonik der altchristlichen zeit*, p. 112. Hannover 1884.

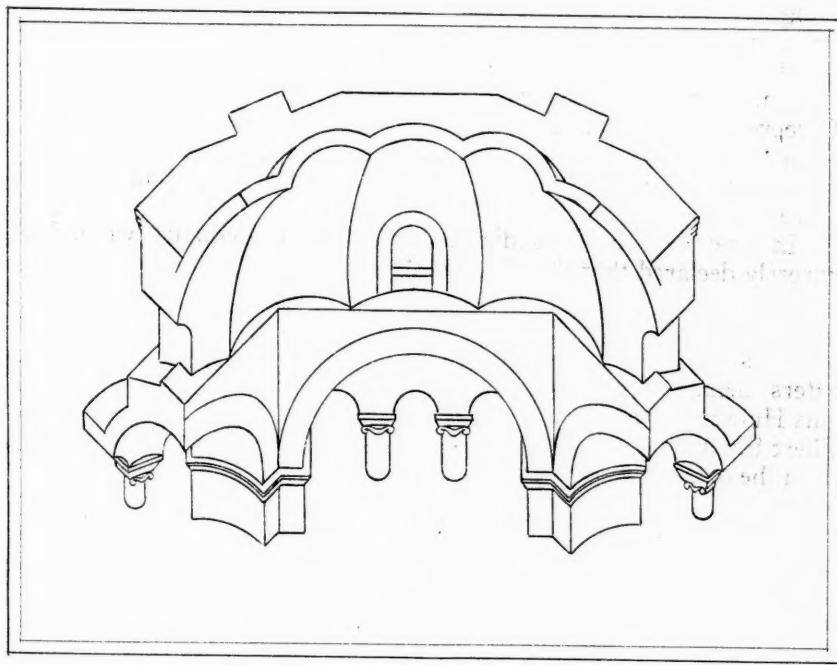
<sup>19</sup> G. Dehio & Bezold, G. von, *Die kirchliche Baukunst des Abendlandes*, I Taf. 4. Stuttgart 1887.

<sup>20</sup> H. Holtzinger, *Die altchristliche Architektur*, p. 101. Stuttgart 1880.

<sup>21</sup> W. Lowrie, *Monuments of the Early Church*, p. 145. New York 1901.



THE DOME ACCORDING TO LETHABY



THE DOME ACCORDING TO CHOISY

exterior published by Rivoira<sup>22</sup> neither Salzenberg's nor Pulgher's plan is absolutely correct, although in general we may presume that Pulgher would not have intentionally given the irregular and unsymmetrical rendering unless he had actually observed this character in the building itself.

When we turn from the plan to consider the construction and form of the dome the testimony of our witnesses is still more disturbing.

The first question that demands our attention is: Does or does not this first of Justinian's churches exhibit the characteristic Byzantine pendentive? Salzenberg, whose splendid publication has proved so influential, describes the dome as resting upon 8 piers, and states that the transition from this octagonal base to a circular base for the dome is effected by means of 8 pendentives.<sup>23</sup> He accordingly produces an elevation showing 8 pendentives, and this is reproduced by Kugler, Schnaase, Hübsch, Essenwein, Kraus, and Adamy.

Pulgher's elevation differs in some respects from that of Salzenberg, but agrees with it in the representation of the 8 pendentives. This elevation has been republished in the important work of Dehio and Bezold.

With such an array of authorities declaring in favor of pendentives it is easy to see how so careful a writer as Rudolf Adamy should cite this building as offering the first example of the spherical triangular pendentive.<sup>24</sup> More recently, however, pendentives of earlier date by several centuries have been discovered in Syria and also in Italy.

Quite a different view was presented in 1883 by Auguste Choisy.<sup>25</sup> He represents the dome as consisting of 16 compartments, all concave to the interior, which rest upon the octagonal base without the intervention of pendentives. His elevation was republished by A. Gosset<sup>26</sup> in 1889.

In a recent book on Mediæval Art by W. R. Lethaby<sup>27</sup> we find it expressly declared that this dome is "not set on regular pendentives," and this declaration is supported by the photograph published by Rivoira<sup>28</sup> in 1901.

These imaginary pendentives have been multiplied by some writers, being transferred to the 16-celled dome above the octagon. Thus Hübsch<sup>29</sup> declares that the dome is set on 16 pendentives and Sir Gilbert Stuart<sup>30</sup> falls into the same error. Neither in the dome above nor in the octagon below are there any pendentives whatever.

<sup>22</sup>Rivoira, *Le Origine della Architettura lombarda*, I, p. 74.

<sup>23</sup>Salzenberg, *op. cit.* p. 43.

<sup>24</sup>Rudolf Adamy, *op. cit.* p. 114.

<sup>25</sup>Auguste Choisy, *op. cit.* pl. XX.

<sup>26</sup>A. Gosset, *op. cit.* p. 81.

<sup>27</sup>W. R. Lethaby, *Mediaeval Art*, p. 44. London & New York, 1904.

<sup>28</sup>Rivoira, *op. cit.* p. 343.

<sup>29</sup>Hübsch, *op. cit.* p. 73.

<sup>30</sup>Stuart, *op. cit.* p. 248.



INTERIOR OF SS. SERGIUS AND BACCHUS

## FORM OF THE DOME

It would seem as if the general form of a dome might be easily described, but very great differences of opinion have prevailed regarding the form of the dome of this church. Lenoir, who had given a French character to the apse, pictures the dome<sup>31</sup> as a polygonal dome of 8 compartments separated by rectangular ribs.

<sup>31</sup>Lenoir. *op. cit.* p. 321.

This representation of the dome of SS. Sergius and Bacchus as a mediæval French cloistered dome has found its way into Germany, being republished by Holtzinger,<sup>32</sup> and into England through the publications of James Fergusson<sup>33</sup> and Sir Gilbert Stuart.<sup>34</sup>

Lenoir's illustration contains no suggestion of window openings and no indication of a drum. Choisy, Gosset and Lethaby all indicate the windows, but their drawings imply a uniformly curved dome resting directly upon the octagonal base.

If, however, we turn to the elevations presented by Pulgher or by Salzenberg and his followers, we shall find the dome resting upon a very distinct drum; according to Pulgher, a polygonal prism of 16 vertical sides; according to Salzenberg a modified prism composed of 8 vertical sides alternating with 8 niches.

The testimony of the photograph published by Rivoira indicates a distinct break in the curvature between the cupola and its drum.

Now let us examine the form of the cupola itself.

On the exterior many of the illustrations would lead us to believe that it was hemispherical. Even Rivoira<sup>35</sup> rather vaguely describes it as "a superficie sferica ondulata." Its true form seems to have been recognized by Salzenberg, who describes it<sup>36</sup> as having "das Ansehen einer gerippten Melone." Similarly Choisy<sup>37</sup> describes and pictures it as "decoupée en feston dans une surface conique." On the whole, then, our authorities are agreed that on the exterior the dome has the form of a melon.

But what is the appearance of the dome on its inner surface? Here we meet again great difference of opinion. Hübsch<sup>38</sup> describes the dome as having a polygonal base of 16 sides, and pictures it as a 16-sided cloistered dome poised by means of 16 small pendentives upon a 16-sided prismatic drum. In this view he appears to have had no followers.

But Salzenberg and his many followers, Pulgher and his successors, Choisy and his follower Gosset, and recently Rivoira, all agree that the 16 compartments are concave on the interior, corresponding to the 16 convex divisions on the exterior. These writers differ from each other in describing how these 16 compartments are constructed.

Salzenberg's<sup>39</sup> description of the dome as constructed of "sechzehn Rippen und ebensoviel Kappen" conveys an erroneous impression, inasmuch as the ribs seem to be as Lethaby<sup>40</sup> describes them, merely "modeled plastered ribs," which mark the 16 divisions of the dome.

<sup>32</sup>Holtzinger, *op. cit.* p. 101.

<sup>33</sup>Fergusson, *op. cit.* p. 442.

<sup>34</sup>Sir G. Stuart, *op. cit.* p. 248.

<sup>35</sup>Rivoira, *op. cit.* p. 76.

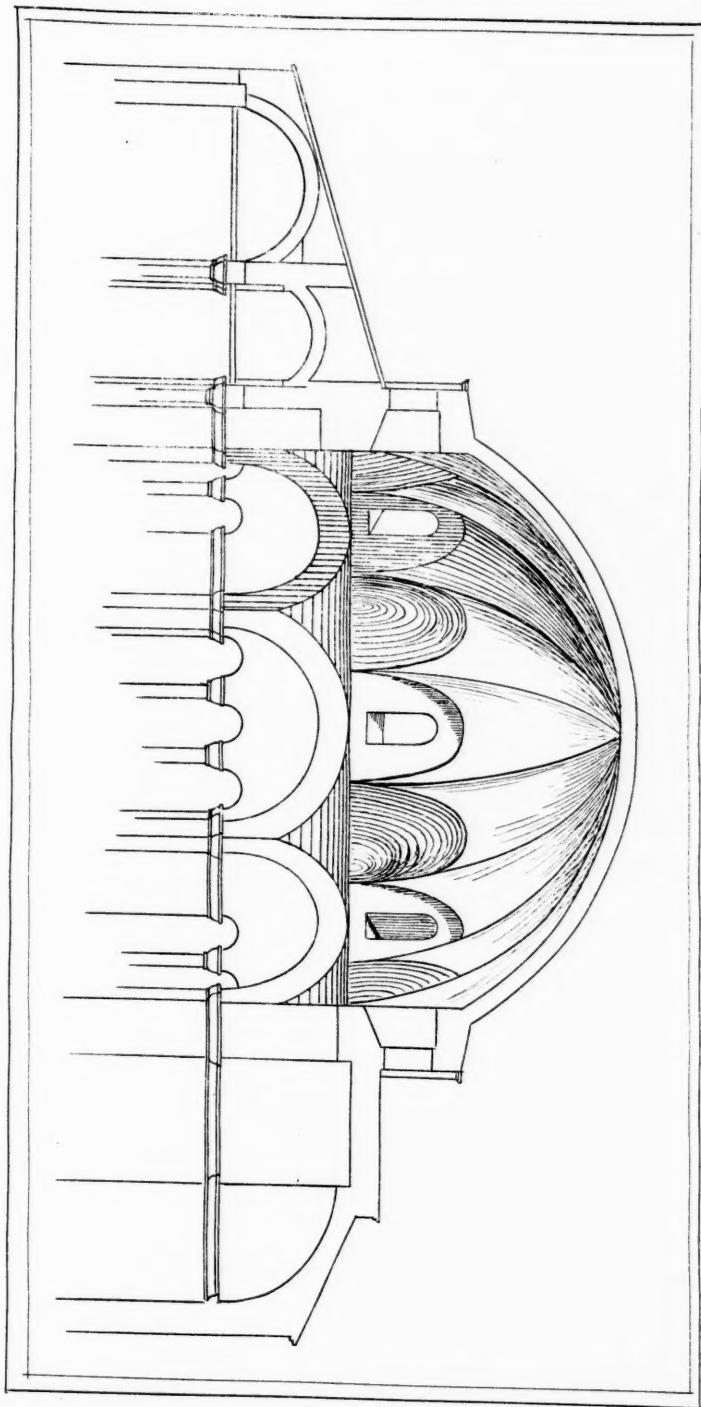
<sup>36</sup>Salzenberg, *op. cit.* p. 43.

<sup>37</sup>Choisy, *op. cit.* p. 68.

<sup>38</sup>Hübsch, *op. cit.* p. 73.

<sup>39</sup>Salzenberg, *op. cit.*

<sup>40</sup>Lethaby, *op. cit.* p. 44.



THE DOME OF SS. SERGIUS AND BACCHUS ACCORDING TO SALZENBERG

The dome is not constructed of "Rippen und Kappen" like a Gothic vault, but is more like a Romanesque vault in which the vaulted compartments terminate in sharp arrises. These arrises have no carrying function, although they may act as Choisy<sup>41</sup> says, "comme des nervures qui rendent la coupole moins deformable."

There remains still another description of the inner surface of the dome—that given by Lethaby.<sup>42</sup> According to this writer the dome is not a polygonal cloistered dome, as Hübsch describes it, nor is it a melon with 16 curved compartments, as described by Salzenberg and Pulgher and Choisy, but the 16 compartments present two forms; those above the windows, and the principal arches of the octagon, rise like the panels of a polygonal cloistered dome, while those above the angles of the octagon are recessed and concave. A cross section of such a dome would therefore be a polygon of which 8 alternate sides are rectilinear and the remainder segments of circles concave to the interior.

Unfortunately, the photographic evidence before us is insufficient to prove or disprove this latest description.

It seems, however, unlikely that this rhythmic alternation of forms would appear on the interior of a dome composed of all convex segments on the exterior, as in this case every alternate panel would have to be filled in on the interior, or at least covered by a plaster shell at some distance from the actual vaults of the dome.

Either expedient would be faulty construction, and if it exists at all is more likely to belong to the Turkish restoration than to the original dome. Unfortunately photographic evidence is insufficient to define accurately the form of the dome, and even a personal inspection might fail to solve the problem, unless some of the modern plastering should be removed.

In reviewing such conflicting testimony as we have before us it is not easy to satisfy ourselves as to the true form of this dome, although it seems probable that Choisy's description is the most accurate. His drawing suggests in the melon-shaped dome a rhythmic sequence of slightly and of deeply-niched sections. Structurally such a form is more practical and more likely to have occurred than that given by Lethaby.

ALLAN MARQUAND.

Princeton University.



CARE OF ANCIENT MONUMENTS.—In emphasizing the necessity of awakening popular public interest in the preservation of ancient monuments and relics Prof. G. Baldwin Brown of the University of Edinburgh says: they "are heirlooms from the past and appeal to the piety and patriotism of the present. \* \* \* As the decay or destruction of any one of them involves an increase of value in those that endure, so the care of them will become every year a matter of more and more urgent duty."

<sup>41</sup>Choisy, *op. cit.* p. 68.

<sup>42</sup>Lethaby, *op. cit.* pp. 43-44.

## ANCIENT AMERICAN "FREE DELIVERY"

ARCHAEOLOGICAL research reveals many important details of the domestic economy of ancient times, but practically nothing that indicates the character or even the existence of what are to-day regarded as vital branches of an adequate public service. Perhaps there were no such branches in those times, and perhaps there were many of which we have no inkling, because they were organized, like an afternoon reception, in such form that they could and actually did disappear without leaving palpable traces behind.

While, therefore, the absence of material remains proves little or nothing conclusively, if excavators uncover no indications of the existence of a common postal system, and we can find nothing in the laws, history or traditions of ancient peoples referring to such a system, we shall run small risk in concluding that it was unknown to them.

In the September issue of *RECORDS OF THE PAST*, under the title of *Post System in Ptolemaic Egypt*, appears a paragraph stating that "a document has been found at Oxyrhynchus which is evidently the record of the local postman, in which he states that he has delivered, among other things, one roll of papyrus for the king, one roll for Antiochus the Cretan and two letters for Appolonius the dioecetes."

Throughout all recorded time kings, generals and great personages have delivered messages, decrees, sentences, pardons, presents, etc., by couriers; but there is nothing, so far as I know, to warrant the belief that a system of general mail delivery was known to ancient China, Syria, India, Babylonia, Asia Minor, Egypt or even Greece and Rome.

The general delivery of private information from house to house, theoretically at public expense and actually under government regulation, is supposed to have been unknown to the ancients of all periods; but I can state that one of the most effective, as well as one of the most interesting systems of "rural free delivery" ever conceived was in use for untold generations by the Indians of the north shore of Lake Superior, especially the Pillagers, and, I suppose (prior to the demoralization wrought by the advent of the Caucasian) by the Indians of other localities.

Suppose, for illustration, that it is time to "tie rice." Shall I interject here an explanation of what that means? Yes? Very well. Wild rice grows in shoal water, the heads, which resemble very long, slim heads of barbed wheat, maturing 1 or 2 and sometimes 3 or 4 feet above the surface. If nothing were done to prevent it, the winds, which blow high and steady from the north in the Lake Superior

region during autumn, would whip the rice grains out into the water, where they would be lost. In order to prevent this waste of a very important article of food, the Indians pass through the rice lakes with their canoes abreast like a platoon of soldiers, while the berry is "in the milk," and, gathering the standing stalks into sheaves, tie them securely just above the water either with thongs of cedar root bark or a few tough strands of the rice straw itself.

With its tops thus bound together, making a living sheaf shaped like a cone, the rice matures without suffering any waste from the whipping north wind. When the grain is fully ripe the Indians return and, bending the sheaves over the sides of their canoes, beat the kernels into their boats. Each canoist continues threshing until his craft has been filled over his legs and around his body, and then all hands return to camp.

Returning now to an illustration of the working of the ancient Pillager free delivery system: The king or chief (not the war chief) has learned that it is time to tie rice, and issues an order that all of those whose duty requires them to do so shall proceed at once to the rice lakes. I am one of those who must obey, but I receive the command while 30 miles from home. Therefore, as I can not spare the time to notify my family in person, I deposit in the nearest post-office on the trail a piece of wood or bone or bark, on which I have made the hieroglyphic statement that I must be absent a half-moon tying rice. These ancient post-offices consist of sheltered crevices in the rocks, holes under the roots or stumps of trees and hollow trees. The French called them *caches*.

Under the tribal law every person who travels over the trail must examine the contents of each post-office that he passes for the purpose of forwarding any messages which are deliverable in the direction that he is pursuing. If the first person who passes the cache or post-office in which I have deposited my letter knows my family or where they live, and expects to see them, he must take the message to them. If he intends to go only a portion of the way, he copies my message, leaves the original as he found it, and deposits his copy in the last post-office that he passes on his journey toward my wigwam.

If another person comes into the trail on the hither side of this copy, he must repeat the operation described, delivering the copy to my family or his own copy into the last cache on the road he travels in their direction.

Thus my family are certain to receive my message in a short time, for Indian laws, where the poisonous influence of the whites is unknown, are never disobeyed.

I asked the civil chief of the Pillagers, how long his people had used this beautiful and effective free delivery system, and he replied, "Always."

As the Pillagers claim to be the aboriginal natives of the soil where the remnant of their tribe is now located, and as the tepee of

the present hereditary chief overlooks the graves of more than 30 generations of his ancestors, the term "always," in this case, must mean, at the lowest, many, many centuries. The present hereditary chief claims that his family have ruled the Lake Superior tribe in the seat where they are now found between 18 and 20 centuries.

FRANK ABIAL FLOWER.

Washington, D. C.



### MOUND BUILDERS OF THE MISSISSIPPI VALLEY

**I**N SPEAKING of the Conical Mounds as being individual and family burial places, especially in that the Chiefs were buried on the most prominent cliffs, commanding the widest range of view; it occurs to me that these points were first used by them as lookouts, watching over and guarding their people, who were lodged all around below; that the Chief's Tepee was erected there and occupied by him and his family, during his lifetime, and at his death he was buried, with all his belongings within the confines of the place where his Tepee had stood until his death, and thus the place came to be a family burying ground which no one else was allowed to invade. This would seem to account for the many descriptions of burned poles and ashes found in mounds that had been opened. I am further led to believe this from a pictograph painting on some Pueblo Indian pottery in my collection, which together with a description may be interesting enough to reproduce here. This pot shows a village of tents, or tepees, enclosed by a stockade or fence. The tepee with the double fly or opening at the top to let the smoke out, is the Chief's, it being his prerogative, to welcome and accommodate the visiting Chiefs of friendly neighboring tribes;—he must therefore have ample provisions, for "heap big smoke."

The one next to this on the right is that of the sub-chief, medicine man, or next in authority, as is shown by his smoke-fly, being different from any other in the whole camp.

The second lodge on the left is vacant, both former inhabitants having died and been buried in mounds on the inside of the lodge. The ends of this tepee are left open to indicate that it will never be occupied by any other person; while the others that are inhabited have both ends closed except for the place of entrance. The zig-zag border at the top, with the rings and dot in the center shows how many summers and winters they have lived at that village,—from one circle to the other represents one year. These burial mounds which they have left, are silent witnesses of their having once lived here in all their glory, and are rich in antiquities, and speak to us of their material

and personal wealth, as it was a wise custom that when a chief died all his worldly possessions should be buried with him in the same mound, thus avoiding dissension among his own people, as there could be no quarrel among the children and relatives over the division of property, under such circumstances, as is often times the case among our more civilized people;—and they were only simple children of nature.

The pot-sherds found here, in the sand hills at Eagle Point, are some of them of cunning workmanship and of patterns strikingly different from each other.

The question is frequently asked, how can you tell that from any other kind of pottery of recent manufacture? This is comparatively



PUEBLO INDIAN DECORATED POT

easy to an experienced and practiced eye;—modern pottery is smooth and generally has the glazed side on the outside; while the ancient mound builders' pottery is rough and dull finish on the outside and generally burned the hardest on the inside. This is accounted for in this way, their pottery was not turned and smoothed on any kind of turn-table nor burnt in any kind of an oven as is the case with the modern pottery. It was made and fashioned by hand, the inside of the pot being filled with red hot coals from the open fire of a log heap and then set in upon the live coals and thoroughly burnt or baked through in this manner; the smooth inside surface generally showed more of a hard finish than the outside, frequently blackened from the live coals, and if there was any gloss at all it was generally found on the inside. The reason why a considerable amount of pottery and

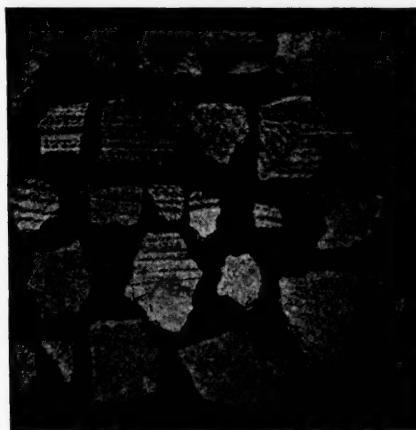
broken pieces of pottery is found in and around these burial mounds, is that it was their custom to bring food and water for some time after the burial in these pots and place them on the mound and in the hut over the mound, and when the saplings or poles of the hut became decayed the heavy weight of sod upon them broke them down, generally breaking the pots to pieces at the same time. For that reason I have never been able to find any whole pots in this immediate neighborhood. But the one from New Albin, Iowa, in my collection, illustrated in the August issue of RECORDS OF THE PAST, upper left hand corner page 237 is quite large and pretty for that kind of workmanship.

The finest collection of mound builders pottery in Iowa is to be found in the Academy of Science at Davenport, Iowa.

Another evidence that mound building was practised here by the Indians up to the time that the white people first settled in this part of the country is shown by the following bone implements found in a good state of preservation in a mound near Garner, Wisconsin, on a high cliff a few miles south of Cassville, Wisconsin, by Mr. Charles Pitschuer, Jr. They all came out of one mound, and are principally household utilities—two bone knives and spoons, combined; several awls and perforators for basket making; 4 arrow heads and 2 eagle's claw ornaments, a bone needle with part of the eye intact, and a musical instrument. These would indicate that the interment had been made comparatively recently, probably about the time the white settlers first invaded the west. There are also numerous other shaped mounds hereabouts, mention of which I must defer to another time.

RICHARD HERRMANN.

Dubuque, Iowa.



POTTERY FRAGMENTS FROM MISSISSIPPI MOUNDS



BURIED WALLS WITHIN THE FORTRESS

### THE FORTRESS OF MASADA

THE precipitous cliffs of the west shore of the Dead Sea approachable only by water or across a barren desert combine elements which have made fortresses built here almost impregnable. The best preserved of these ancient fortifications is the one at Zaweirah, which stands on a high eminence at the mouth of a deep defile which enters the Dead Sea by Jebel Usdum at the south end of the Sea. The natural strength of its location is clearly shown in the accompanying illustration.

About 15 miles north of Zaweirah is another fortification not so well preserved but of greater historic interest, it being the last fortress held by the Jews after the fall of Jerusalem in A. D. 71. This fortress, called Masada, is situated on a limited plateau nearly 1200 ft. above the Dead Sea. The approach from the sea is too steep for animals to climb and although not dangerous is nevertheless fatiguing.

Josephus describes the situation thus:

"There was a rock, not small in circumference, and very high. It was encompassed with valleys of such vast depth downward, that the eye could not reach their bottoms: they were abrupt and such as no animals could walk upon excepting at two places of the rock, where it subsides so as to afford a passage for ascent though not without difficulty." This ascent from the Dead Sea Josephus calls "the serpent."

Along the shores of the Dead Sea there are still to be seen long rows and numerous inclosures of stone which marked the camp of the Romans during their siege. The approach to the fortress, however, from the east is so steep that no besieging army could attack it from

that direction. On the west there is a more gradual ascent to within a short distance of the fortress. The last part of the ascent, however, was exceedingly steep so that without enormous labor it would have been impossible for an enemy to raise their engines of war so as to have their missiles reach the fortification. Added to these natural advantages is the difficulty of obtaining water for a besieging army, the only abundant supply within reach being at Engedi some 15 miles to the north on the shores of the Dead Sea. As all the region surrounding Masada is barren desert the importance of this location for a fortress of refuge was early recognized.

Jonathan Maccabaeus, the high priest, built the first fortress of which we have any knowledge on this spot. Later King Herod the Great rebuilt it and strengthened it, probably with the intention of



EMBANKMENT THROWN UP BY THE ROMANS

making it a place of safety to which he could flee to escape the fury of the Jews if they should rise against him or possibly as a place of refuge in case he should be deposed by Antony at the request of Cleopatra who desired the control of Palestine.

Whatever may have been the incentive, it is evident that Herod planned this fortress to be secure from assault and provisioned to withstand a protracted siege. So carefully was this done that, according to Josephus, the fruits and provisions laid in by Herod were, after 100 years "fresh and full ripe and no way inferior to such fruits newly laid in." These stores included large quantities of corn, wine, oil, pulse and dates.

Around the summit of this promontory Herod built a wall 7 furlongs long completely surrounding it, 12 cubits high and 8

cubits broad with 38 towers erected on it, each of which was 50 cubits high. In the center of the hill a large plot of good soil was reserved for agriculture while large reservoirs for water and store houses for provisions were made. Herod also built him a fine palace with towers at the corners 60 cubits high. He also provided in true Roman style fine baths for his personal use.

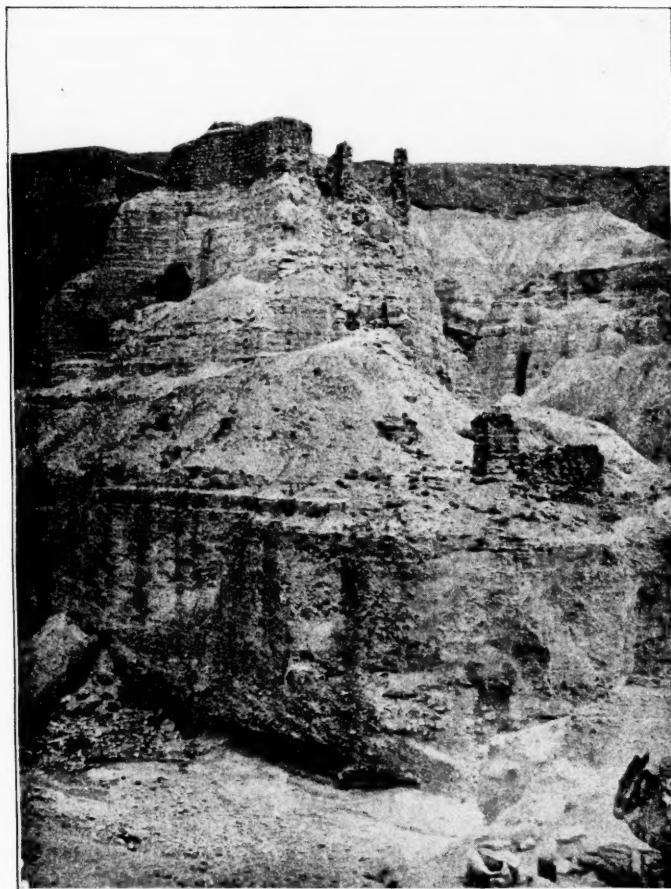
As these stores were still intact at the time of the destruction of Jerusalem there could be no more attractive place for a band of practical brigands to seize than Masada. This Eleazar, the head of a band of about 1,000 Sicarii recognized, and by treachery obtained possession of the fortress.

Shortly after the fall of Jerusalem the Romans sent an army under Silvia to besiege and take Masada. According to Josephus, Silvia first built a wall completely around the fortress, a statement which has to be rather liberally interpreted on account of the configuration of the country. However, an extensive system of stone walls, mentioned earlier, surrounded the fortress wherever escape was practicable so as to cut off all possibility of any of the band breaking through the Roman lines. Knowing that it would be impossible to starve the garrison into submission Silvia decided to storm the fortress. In order to do this it was necessary to throw up an enormous embankment on the west side of the fortress over which his enormous engines of war could be brought within striking distance of the walls.

An idea of this gigantic undertaking is shown in the accompanying illustration, the whole ridge having been artificially thrown up by the opposing army. According to Josephus the Romans built a tower 60 cubits high which was covered with iron and from which they could throw darts and stones into the fortification. They also used a battering ram with which they broke down the outer stone wall. But the Sicarii hastily built a second wall of beams and earth, which being more yielding than the stone wall withstood the attacks of the Roman battering ram.

As a last resort the Romans set fire to this wooden wall. Shortly after the flames were started, however, a strong north wind came up and blew them toward the Romans and threatened to destroy their machines of war. However, another sudden change of wind to the south turned the flames again on the walls and totally destroyed them. Seeing this Eleazar decided that fate was against him but resolved to escape falling into the hands of the Romans by committing one of the most awful tragedies in history. Before doing this, however, he had everything that was valuable destroyed with the exception of the provisions, lest it fall into the hands of the Romans. These food supplies he left, for he did not wish the Romans to think that they had given up the fight for lack of food.

In order to avoid surrendering to the Romans he decided to have all persons in the fortress, both men and women, put to death. This would have been fully carried out had it not been that two old women,



FORTRESS AT ZAWEIRAH

one of them a relation of Eleazar, with 5 children, hid themselves, and so escaped to tell the story. Through these women Josephus obtained the facts and also the substance of Eleazar's speech, urging the garrison on to the awful tragedy. It took two speeches, in fact, to fully convince all the men of the advisability of taking the fatal step. The following extracts give an idea as to the tenor of the speeches:

"Let our wives die before they are abused, and our children before they have tasted slavery; and after we have slain them let us bestow that glorious benefit upon one another mutually, and preserve ourselves in freedom as an excellent funeral monument for us. \* \* \* Our hands are still at liberty and have a sword in them: let them, then, be subservient to us in our glorious design; let us die before we become slaves under our enemies, and let us go out of the world together with

our children and our wives in a state of freedom. This is what our laws command us to do, this it is that our wives and children crave at our hands; nay, God himself hath brought this necessity upon us.  
 \* \* \* Let us, therefore, make haste, and, instead of affording them so much pleasure as they hope for in getting us under their power, let us leave them an example which shall at once cause them astonishment at our death, and their admiration for our hardiness therein."

The effect of this speech was that the men killed their wives and children and then chose 10 men to slay all the other men and from these 10 by lot one man was chosen to kill the other 9 and then set fire to the palace and kill himself. Nine hundred and sixty were killed in this



A GATE IN THE WALLS OF MASADA

way, only the 2 women and 5 children escaping. The next morning when the Romans entered the city a death-like silence prevailed.

The ruins of these walls, store-houses, reservoirs and palace indicate the former strength of this fortress but tell no tale of the awful tragedy which took place here. The spot is seldom visited by tourists because of its distance from the large towns and good camping places. But its historic interest as the last stronghold of the Jews makes it of immense historical interest, and a few days' travel in the "wilderness" will put one in the proper frame of mind to realize the beauty and importance of the gushing springs, such as those of Engedi, where he will doubtless camp on an island of verdure in a desert waste.

FREDERICK BENNETT WRIGHT.

## PALESTINE EXPLORATION FUND

**T**HE recently published biography of Rev. Henry Clay Trumbull revives the enthusiasm felt in 1881 over his discovery of Kadesh Barnea. It is true that so long ago as 1845 Rev. John Rowlands had found and described Ayn Qadees, but afterward others had fixed upon two other sites, and the whole subject was in dispute. Not only this, but the difficulty of reaching the place was almost insuperable, since it lay where the Arab escort, over that part of the wilderness, was afraid to go, and all their arts would be used to deceive the traveler who desired to investigate. But Dr. Trumbull, although he went abroad in ill health, was not to be deceived or defeated. His dragoman he won over by promising to put him "into a book." His guides he would go without, if they dared not lead on. And he visited in time all three places in dispute and fully vindicated the claim of Ayn Qadees. On his way home in London he was warmly greeted by the officers of our Fund, and since then Kadesh Barnea has been placed on its maps at the right point. The discovery was a remarkable verification of the Bible narratives of Numbers XIII-XX.

Rev. F. W. Holland had sought for Kadesh Barnea in 1878, but his Arabs "would not go." Others had like experience, even Prof. E. H. Palmer, but Trumbull's account in the *Quarterly* of July, 1881, and in his own volume, set the question at rest. Colonel Conder's questionings of the identification led Dr. Trumbull to reply in the *Quarterly* for April, 1885, with great force and skill. He thus did a master stroke for Biblical research. He even obtained for his *Sunday School Times* a letter from the original discoverer Rowlands, then at an advanced age.

An expedition now to the site, such as Mr. Macalister might lead, would be very useful, giving us photographs and possibly inscriptions. It is understood that the tabernacle remained there while the scattered bands of Israelites "wandered" or lived a nomad life in the wilderness; and from there they started at last for Mount Hor and Canaan, approaching this time from the east. Kadesh of course means "holy," probably referring to the tabernacle. The name Barnea is not so plain, but some derive it from the verb "to wander."

The serious and increasing illness of the Sultan is emphasized to us by the delay in receiving the new firman, but the London office "daily" expects word, and work will be taken up at once.

It should be understood, as the *Quarterly* for October shows clearly, that work never ceases in the general field, for not only do others than Mr. Macalister keep up intelligent investigation, but he is never idle and is as skilful in studying inscriptions on tombs and in identifying sites as he is in excavating a buried city.

The delay in obtaining the firman for renewed excavation still continues, and is causing great depression to us all, and some are blaming the officers of the Fund. Nothing could be more unjust. Our officers have made and are making every effort, but conditions have been unusually adverse—that is to say, the Sultan has been ill, the British consul at Jerusalem has died, and a new governor has been appointed for Jerusalem. Any one of these causes would have been serious; combined, they have greatly troubled us; and we are not alone in this unhappy suspense. But good news is looked for daily, as Mr. Macalister is in Constantinople.

It is interesting to see how information of the work at Gezer makes its way abroad. A gentleman residing in Palestine wrote an account of it for the *Biblical World*, published by the University of Chicago, and the news of the work at Gezer was telegraphed over the country. Thus a single article did more to widely extend a knowledge of the work than our *Quarterlies* for 3 years of the excellent work of Mr. Macalister on *Bible Side Lights from Gezer* had done.

And now comes a writer calling himself "Cosmopolitan" in the *Boston Transcript*, who writes for our benefit some paragraphs well worth quoting:

The site of the ancient and buried city of Gezer was identified thirty-six years back, but its excavation is the most recent enterprise, begun in 1902 and brought down to last summer, when some glimpses of the results achieved were given at the annual meeting of the Palestine Exploration Fund. R. A. Stewart Macalister, the well-known antiquary, has published a book on the subject.

The excavations have added 1,500 years to the early history of Gezer, dating it back to 3,000 B. C., when a diminutive cave-dwelling race lived there. A landmark in its Biblical history is that the city was given by the King of Egypt to his daughter when she married Solomon. It stood on the verge of the territory inhabited by that mysterious race, the Philistines, and when David routed them he went in pursuit as far as Gezer.

Then there is Rebecca, famous in every Sunday-school. Rebecca, who went to draw water from a well, was picked out from other maidens by the servant of Abraham, who was in quest of a wife for his master's son. She thus became the wife of the patriarch Isaac and the mother of Esau and Jacob. The unearthing of the houses at Gezer helps experts to fill in the story of the wooing of Rebecca by reconstructing for us the home of the maiden and her interesting brother, Laban.

The death of Samson, narrated in the Book of Judges, has been ranked as a myth by critics who could not accept the possibility of his supposed achievement in pulling down the pillars and killing so many Philistines. But in a stratum at Gezer, some three hundred years older than the time of Samson, the excavators have found a form of building which answers to a remarkable extent to the conditions of the story. It is a temple, with a portico supported by four wooden pillars.

The discoveries at Gezer also enable experts to form a fair conception of the Horites, a hitherto unknown race of cave dwellers referred to in Genesis and Deuteronomy. The Amorites, who are mentioned for their "iniquities" in Genesis, now stand in clearer light, for their many forms of idolatry and moral abominations are better understood by the digging out of the "High Place" of Gezer, which is the largest early Palestinian sanctuary or place of worship yet unearthed.

Readers of the October *Quarterly* will have enjoyed Mr. Crawley-Boevey's paper on the Holy Sepulcher, about which he holds more positive views than the late Sir Charles Wilson, and in favor of the site known as the "Skull Hill."

THEODORE F. WRIGHT.



## BOOK REVIEWS

### A TOUR OF FOUR GREAT RIVERS<sup>1</sup>

THE best insight into the actual conditions which existed during the early history of our country is gained from the personal journals written at that time. For this reason the publication of reliable diaries is always to be commended. The journal of Richard Smith is presented to us by Francis W. Halsey in his volume entitled *A Tour of Four Great Rivers*, to which the author has added a short comprehensive history of the Pioneer settlements along the Hudson, Mohawk, Susquehanna and Delaware Rivers.

On May 5, 1769 Richard Smith started from New York traveling by boat to Albany and Cohoes, then overland to Canajoharie and Otsego Lake, from whence he traveled by canoe and Indian trail down the Susquehanna River to Oghwaga. Crossing to the Delaware from here he descended it to Trenton and Burlington, and then crossed overland to New York, thus completing a most interesting circuit. The journal together with the numerous reproductions of contemporary engravings and views of landmarks, which are still standing, gives an excellent idea of this country as it was in the latter part of the XVIII century.

The closing chapter of notes on the manners and customs of the Indians by Richard Smith, is interesting, but his observations were too limited to be of much anthropological value.

The make-up and binding of the book is exceedingly attractive.

### HISTORIC HADLEY<sup>2</sup>

It is now nearly two and one-half centuries since a small band of Puritans withdrew from the settlements in the vicinity of Hartford in Connecticut and purchased from the Indian chiefs the land upon which to establish a new home just north of Mount Holyoke in Massachusetts

<sup>1</sup>*A Tour of Four Great Rivers*, the Hudson, Mohawk, Susquehanna and Delaware in 1769, being the journal of Richard Smith, of Burlington, New Jersey, edited with a Short History of the Pioneer Settlements, by Francis W. Halsey. Charles Scribner's Sons, New York, 1906.

<sup>2</sup>*Historic Hadley. A Story of the making of a famous Massachusetts town*, by Alice Morehouse Walker. The Grafton Press, New York.

and there, for conscience' sake, they settled, their families founding the town of Hadley.

The blood of these hardy Puritan pioneers is to-day coursing the veins of descendants in every nook and corner of the land, all of whom should welcome this pen-picture of the homes and lives of their grandparents 7 to 10 generations removed. Here Governor John Winthrop settled in his old age, died and was buried before the town had hardly commenced to hold religious service in the meeting-house which the new colony had but just erected. Here were secreted until their death the regicide judges by whom Charles I of England was dethroned and executed. The manners and customs of that early day are depicted with a fidelity to detail that adds to the charm of quaintness that pervades the atmosphere of its pages.

It is most gratifying to note the number of valuable books of this character that is published by the Grafton Press who can claim a distinctive field in book-making in producing those that occupy a high place as record sources of history.

### HEROES OF DISCOVERY IN AMERICA<sup>3</sup>

Mr. Morris in his preface thus states his purpose: "Heroes of discovery are these [explorers of America] in the highest sense, and it is fitting that the story of their deeds should be put upon record. This we have sought to do, \* \* \* endeavoring to omit none of the great discoveries, none of the leaders in this great drama of the opening of a new world." The book is of especial interest to teachers of American history in secondary schools, giving, as it does, concise accounts of more than 40 explorers. The range is wide, including the earliest known navigators who reached our coast and the latest seekers for the north pole, as well as such inland pioneers as Daniel Boone. The value of the book is somewhat impaired by the lack of an index.

### BOOKS BY DR. PAUL CARUS

That many of the celebrated maxims and moral stories of the Chinese are not only worthy of consideration but exceedingly interesting will be admitted by any one who reads those tales, which have been translated from the original Chinese by Teitaro Suzuki and edited by Dr. Carus. These appear in two small volumes, one *Yin Chih Wen*<sup>4</sup> and the other *T'ai-Shang Kan Ying P'ien*.<sup>5</sup>

<sup>3</sup>*Heroes of Discovery in America*. By Charles Morris. With 12 illustrations. Philadelphia and London. J. B. Lippincott, 1906. Pp. 344.

<sup>4</sup>*Yin Chih Wen*, the Tract of the Quiet Way, with extracts from the Chinese Commentary, translated from the Chinese by Teitaro Suzuki and Dr. Paul Carus, and edited by Dr. Paul Carus. The Open Court Publishing Company, Chicago, 1906.

<sup>5</sup>*T'ai-Shang Kan-Ying P'ien*, Treatise of the Exalted One on Response and Retribution, translated from the Chinese by Teitaro Suzuki and Dr. Paul Carus, containing Introduction, Chinese Text, Verbatim Translation, Explanatory Notes and Moral Tales. Edited by Dr. Paul Carus, with 16 plates by Chinese Artists and a frontispiece by Keichyu Yamada. The Open Court Publishing Co., Chicago, 1906.

The first, which is "The Tract of the Quiet Way with Extracts from the Chinese Commentary" contains maxims much resembling those from the Book of Proverbs, while the notes of the Chinese Commentator throw interesting side-lights on the Chinese interpretation of these maxims, which are read and studied by the Chinese at home and in their schools. Although these are almost unknown in this country, yet, as Dr. Carus says, "there is probably no family in China without them."

The second book is a "Treatise of the Exalted One on Response and Retribution." It contains the original Chinese text together with a verbatim translation of the same. The free translation will be of great interest to all classes of readers. The moral tales include such subjects as "The Power of a Good Man's Name," "The Ruffian's Reform," "Punishment Apportioned to Crime," etc. The illustrations are by Chinese artists and add greatly to the value and interest of the book.

Another book by Dr. Carus is entitled *Amitabha*.<sup>6</sup> It is a story of the Buddhist Theology, into which considerable romance is woven. It describes the attempts of a young man Charaka by name to solve the problem of the Supreme Being. Although an ambitious and active young man he becomes a recluse, but finding that his spirit is not satisfied by such a life, he leaves the monks with whom he at first cast his lot, engages in active life, and rises to power in the empire. His final success he considers as due to his "application of the Lord Buddha's maxim of loving-kindness in all fields of human intercourse, in family life, in politics, in labor and social affairs, in dealing with friends and foes, with animals, and even with the degenerate and criminal." The enlightenment of our souls is most important, he declares.



## EDITORIAL NOTES

PREHISTORIC SKELETONS FROM OMAHA.—On Nov. 3 a remarkable skull was found near Omaha, Nebr., in what is spoken of in newspaper reports as "an Indian mound." However, Mr. Warren Upham writes that "as the locality is in the great loess area, Prof. Winchell and I surmise that the 'mound' may be a natural one, and formed of the loess, as originally deposited and undisturbed excepting probably some surface erosion. Then the age would be nearly the same as at Lansing, Kans., which I would estimate to be probably about 15,000 to 12,000 years." The skull is described as very prognathous, and as belonging to a giant. Three other skulls and skeletons were found in the same locality. Concerning these, Mr. Upham writes further, "if they are from an aboriginal burying mound I should say

<sup>6</sup>*Amitabha, a Story of Buddhist Theology*, by Paul Carus. The Open Court Publishing Company, Chicago, 1906.

that they represent some abnormal family of no important significance." A full discussion of these discoveries will appear in the near future in RECORDS OF THE PAST.

WIDTH OF THE OLD VIA SALARIA, ROME.—While making a new bridge on the Via Salaria, on the Rome side of Castel Giubileo, a number of blocks of the ancient road were discovered *in situ* from which it has been possible to ascertain that the road was nearly 16 ft. wide.

THE ROUTE OF THE EXODUS.—Mr. Currelly in a lecture delivered at the exhibition of the Egypt Exploration Fund at King's College, England, claimed that the route of the Exodus must have passed near Tanis, whose garrison he thinks turned out in pursuit and were later magnified into "Pharaoh and his hosts." He also considers that the manna was nothing but snow which the exiles saw for the first time after they crossed the Red Sea into the mountains of Sinai.

EARLY CONNECTION BETWEEN GREECE AND EGYPT.—Mr. H. R. Hall of the Egypt Exploration Fund asserts that he can prove a connection between Greece and Egypt as early as the XII dynasty, and can probably extend it back to neolithic times. He contends that the earliest civilization of both countries was neither Semitic nor Aryan but was derived from Prof. Sergis' Mediterranean race of whom he considers the "dark dolichocephalic" Southern European of the present day the representative.

EGYPTIAN TOTEMS.—M. Victor Loret has put forward the theory that the gods of the Egyptians were the totems of the different Egyptian clans before they were worshiped as gods. If this theory is correct we have a striking parallel in the totems of our Alaskan Indians.

THE STONE AGE AT BRABRAND, DENMARK.—In a paper by Mr. Thomsen, which recently appeared in the *Memoires* of the Royal Society of Northern Antiquaries of Copenhagen, he describes a number of interesting objects of the Stone Age found at the eastern end of the "long and straight lake of Brabrand, which passes through the river of Aarhus to the Cattegat in a spot which in early times must have formed with that river an islet."

Among the objects specially noted are: a hatchet of deer horn attached to a thick wooden handle, from which the bark had not been removed (the hatchet having been broken away from the handle at the original hole made for the attachment at its narrower part, another hole was drilled through the broader part); a hatchet ornamented with lozenge-shaped figures bounded by parallel lines, and with parallel bands of dots and of triangular figures formed by the broken point of a flint flake; a bone comb of 5 teeth, of which 3 remain; the left shoulder blade of an aurochs, from which 3 roundels have been partially cut out, and 6 similar bones, belonging to various animals, with a fragment of a ring detached from one of them; no pottery but a vase, almost complete, with an ornament on the edge formed by the finger-nails of the operator, and frag-

ments of similar ones; a piece of carved wood, apparently for throwing; a long piece of wood, worked to a point at the lower end; and many piles.

**STUDY OF CALIFORNIA SKULLS.**—Mr. Ales Hrdlicka has recently been engaged in studying prehistoric skulls found in different parts of California. The crania in the collection studied were similar enough to lead him to conclude that they belonged to members of the same tribe, the common progenitors of the various Indian tribes at present in California. From the small size and the shape it seems probable that they were of small stature and low mental development. Certain Indian tribes of Mexico are physically related to the Californians.

**ANCIENT NINEVEH.**—Sir E. Maunde Thompson, Director of the British Museum, in his report just issued, says, concerning the work of the past year at Nineveh:

The excavations which have been in progress since 1903 on the site of ancient Nineveh were brought to a close in February, 1905. The mound of Kouyunjik has now been fully explored, testing trenches having been cut in all directions, in order to be sure that no remains have been overlooked. The principal recent discovery is the site of the Temple of Nabu, the war-god. The ruins were cleared, but the building had been so utterly destroyed and burned, presumably by the Elamites at the capture of the city, that it was not possible even to make a complete plan of it. The library of tablets, which it probably contained, must have been entirely destroyed. So thorough, indeed, was the destruction of the city by the conquerors, to judge from the condition of the remains, that the preservation of the collection of tablets now in the museum, and forming only a part of the great library of Sennacherib and Ashur-bani-pal, must be attributed to some accidental falling in of debris, which thus covered them and saved them from the enemy.—*Antiquary*, London.

**EXCAVATIONS AT EPHESUS.**—The excavations on the site of the Temple of Artemis were brought to a close on June 17. The result of the two seasons' excavations is as follows:

The remains of 4 temples superimposed one on another have been examined. Taking these temples in order, from the latest to the earliest, they are: (1) The temple of the middle of the IV century B. C., which was the main object of Mr. Wood's exploration. Mr. Wood removed almost every relic of it, and his work proves to have been very thorough. The remains which he discovered are those now in the British Museum. (2) The temple built in the middle of the VI century B. C., usually associated with the name of Croesus, was the original object of the recent exploration. This temple was only touched by Mr. Wood. The whole area of the surviving platform has now been cleared, and, from the numerous fragments recovered, an architectural restoration of all except the architraves will be possible. (3) The third temple, the existence of which has been hitherto unsuspected, was very little below the level of the one above, and was of smaller area. Only small traces of it remain, and its period of existence was probably short. (4) Of the lowest and earliest temple, the structure of what may have been the naos or statue-base alone remains. The lowest blocks of this structure are laid on the virgin sand. It was here that numerous objects of gold, ivory, etc., were found. From the style of these objects it is inferred that the period of this earliest temple was probably not earlier than the VII century B. C. The work was much impeded by abnormally heavy rains.—*Antiquary*, London.

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